

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 20 JUN 2006

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Applicant's or agent's file reference JTS/CP/P13212PC	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. PCT/GB2005/001159	International filing date (day/month/year) 24.03.2005	Priority date (day/month/year) 26.03.2004	
International Patent Classification (IPC) or national classification and IPC INV. B05D1/18 B05D3/02			
Applicant THE UNIVERSITY COURT OF THE UNIVERSITY OF ...			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand  29.09.2005		Date of completion of this report  19.06.2006	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized officer  Connor, M  Telephone No. +49 89 2399-8402	



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2005/001159

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on
- ☒ the international application in the language in which it was filed
  - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
    - ☐ international search (under Rules 12.3(a) and 23.1(b))
    - ☐ publication of the international application (under Rule 12.4(a))
    - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

**Description, Pages**

1-13 as originally filed

**Claims, Numbers**

1-24 as originally filed

**Drawings, Sheets**

1/3-3/3 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-11
	No: Claims	12
Inventive step (IS)	Yes: Claims	1-11
	No: Claims	12-24
Industrial applicability (IA)	Yes: Claims	1-24
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

- 1 The following documents were cited in the search report:
  - D1: US 2003/081463 A1 (BOCIAN DAVID F ET AL) 1 May 2003 (2003-05-01)
  - D2: US 2003/035967 A1 (EFFENBERGER FRANZ) 20 February 2003 (2003-02-20)
  - D3: EP-A-0 598 361 (BENSION, ROUVAIN M) 25 May 1994 (1994-05-25)
- 2 The process proposed in claim 1 of the present application is considered as novel and inventive (Article 33(2)&(3) PCT) for the following reasons.
  - 2.1 Claim 1 calls for a process for producing a surface-modified layer system comprising:
    - (A) a substrate having a surface and
    - (B) a self-assembled monolayer (SAM)
      - (B1) anchored to at least part of said surface,
      - (B2) wherein said SAM is comprised by aryl or rigid alicyclic moiety species,said process comprising the steps of:
    - (a) providing a SAM anchored to a substrate, wherein said SAM is polymorphic having at least first and second structural forms; and
    - (b) thermally treating said SAM so as to change said SAM from said first structural form to said second structural form.
  - 2.2 D1-D3 disclose methods for producing a surface-modified layer system, differing from the subject matter of present claim 1 in that step (a) is not explicitly disclosed, and step (b) is totally absent. Any thermal treatment disclosed in D1-D3 is in relation with the formation of an SAM layer and not as in present claim 1 with the change from a first to a second structural form. The problem to be solved starting from any of D1-D3 is at least to provide an alternative --possibly enhanced-- method for producing a surface-modified layer system. The solution proposed in present claim 1 is characterized by features (a) and (b) as defined in point V-2.1 supra. This solution is inventive because none of D1-D3 even mention the possibility of producing polymorphic SAM's, let alone thermally treating such SAM so as to change said SAM from said first structural form to said second structural form.

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(SEPARATE SHEET)**

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- 3 The product proposed in claim 12 of the present application cannot be considered as novel (Article 33(2) PCT) for the following reasons. D1-D3 all disclose a SAM anchored to the surface of a substrate, said SAM being comprised by a aryl or rigid alicyclic moiety species in a substantially stable structural form (cf. D1, [0061]; D2, [0013] and claim 8; and D3, c.14:45).

It is not at present clear whether it is possible to distinguish a SAM as disclosed in D1-D3 from a SAM "derived, in situ, by thermal treatment from a less stable structural form." Consequently, the subject matter of present claim 12 is considered to be anticipated by the disclosure of D1-D3 (Article 33(2) PCT; see for information the EPO-Guidelines, C-IV, 4.7b).

- 4 The dependent claims 13-24 do not seem to contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step.